



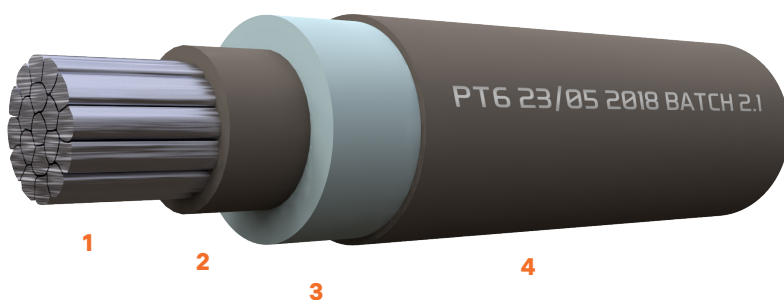
Lightning Protection Cables

ISOLATED DOWN CONDUCTOR CABLES FOR WTG



Polytech manufactures a range of high voltage cables, specifically designed for WTG LPS application requirements. Cables are tested in accordance with IEC60243-1, IEC60143-3 and IEC60060-1.

Cables are fully compatible with all common WTG blade manufacturing materials, resins, adhesives and operating environmental conditions.



- 1 Aluminium or Copper Conductor (IEC Class 2 or 5)
- 2 Extruded semi-conductive anti-corona layer with gap filling, specially developed TPE-S polymer compound (PT-E2-A70SCUVOZ-9005)
- 3 Extruded insulating layer.
 - PT2 family: Cross-linked PEX polymer compound (PT-C7-XL-Natural)
 - PT6 family: TPE-V elastomer compound (PT-E3-A73UVOZ-9005)
- 4 Superior anti-abrasive TPE-U environmental protection jacket (PT-E1-D54HYOZMO-9005)

Physical Characteristics

	PT6-CU50 HV300DC	PT6x-CU50 HV500DC	PT6-CU70 HV300DC	PT6-AL95 HV300DC	PT2-CU50 HV500DC	PT2-CU70 HV500DC	PT2-AL95 HV500DC
Impulse Dielectric Strength (Nominal)	300 kV	500 kV	300 kV	300 kV	500 kV	500 kV	500 kV
Conductor CSA	50 mm ²	50 mm ²	70 mm ²	95 mm ²	50 mm ²	70 mm ²	95 mm ²
Conductor Material	Copper	Copper	Copper	Aluminium	Copper	Copper	Aluminium
Conductor Type	IEC 60228, IEC Class 5	IEC 60228, IEC Class 5	IEC 60228, IEC Class 5	IEC 60228, IEC Class 2	IEC 60228, IEC Class 5	IEC 60228, IEC Class 5	IEC 60228, IEC Class 2
Conductor Construction	7 x 52 x 0.395 mm	7 x 52 x 0.395 mm	7 x 48 x 0.5 mm	19 x 2.52 mm	7 x 52 x 0.395 mm	7 x 48 x 0.5 mm	19 x 2.52 mm
Conductor OD	9.8 mm ± 0.2 mm	9.8 mm ± 0.2 mm	10.7 mm ± 0.3 mm	11.4 mm ± 0.3 mm	9.8 mm ± 0.2 mm	10.7 mm ± 0.3 mm	11.4 mm ± 0.3 mm
Cable OD	18.5 mm ± 0.5 mm	28.5 mm +1/-0.5mm	19.5 mm ± 0.5 mm	20 mm ± 0.5 mm	18.5 mm ± 0.5 mm	19.5 mm ± 0.5 mm	20 mm ± 0.5 mm

Environmental Characteristics

Characteristics	Value
Continuous Operating Temperature Range	-55 to +100 °C
Short Duration (3hrs) Max Temperature	+120 °C (PT6-CU50 HV300DC: +140 °C)
Fluid Resistance	Resistant to hydraulic and lubrication oils, anti-freeze. No adverse degradation when exposed to common bonding adhesives and resins.
Salt Mist	Resistance to Salt Spray environment to method ISO 9227
Flammability	UL94 HB

Accelerated life tested to:

Composite Humidity, Temperature	Compliant to IEC 60068-2-38, Maximum 93%RH, +65 °C
Thermal Stress Cycling	Extended cycling between -40 °C to +70 °C (Ramp 12 °C/minute) to method IEC 60068-2-14

Mechanical Characteristics

	PT6-CU50 HV300DC	PT6x-CU50 HV500DC	PT6-CU70 HV300DC	PT6-AL95 HV300DC	PT2-CU50 HV500DC	PT2-CU70 HV500DC	PT2-AL95 HV500DC
Core conductor Tensile Strength Min	100 MPa	100 MPa	140 MPa	135 MPa	100 MPa	140 MPa	135 MPa
Insulation elongation at break	>100 %	>100 %	>100 %	>100%	>7 %	>7 %	>7 %
Minimum bend radius	6 x OD	6 x OD	6 x OD	8 x OD	6 x OD	6 x OD	8 x OD
Mass	0.64 kg/m	0.97 kg/m	0.9 kg/m	0.5 kg/m	0.64 kg/m	0.9 kg/m	0.5 kg/m